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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,176	08/28/2003	Jeffrey C. Fuller	222574	5959

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EXAMINER

SEYE, ABDOU K

ART UNIT	PAPER NUMBER
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2194

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/650,176

Applicant(s)

FULLER, JEFFREY C.

Examiner

Abdou Karim Seye

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/05/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on January 05, 2007 has been received and entered. The amendment amended Claim 18. The currently pending claims considered below are Claims 1-26.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 9-15, 18-23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by **Kush (US 6874144)**.

Claims 1, 10 and 19 :Kush discloses a method, system and computer-readable medium having computer-executable instructions comprising:

- a. Receiving an I/O request from an application thread (Abstract; fig.1, col. 4, lines 63-67);
- b. Performing an I/O operation in response to the I/O request (Abstract; fig.1, col. 5 lines 1-10); and

c. Determining whether to boost priority of the application thread according to criteria based on a status of I/O operation performed for the application thread (col. 1, lines 55-65 and fig. 3a, mutex ID field, col. 6, lines 10-30).

Claims 2, 11, and 20 :Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 1, 10 and 19 above and further discloses steps of:

a. Determining not to boost the priority of the application thread (fig. 9/272,276,280,284, col. 10, lines 36-67); and

b. Determining whether to boost the priority of the application thread (fig. 9/272,274,282, col. 10, lines 36-67).

Claims 3, 12 and 21:Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 1, 10 and 19 above and further discloses a memory pool, and the step of performing the I/O operation includes copying data into the I/O memory (fig. 2 col. 5, lines 50-55).

Claims 4, 13 and 22 :Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 1, 10 and 19 above and further discloses the step of boosting the priority of the application (fig. 9, col. 11, lines 5-15).

Claims 5 and 14 :Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 4, 13 and 22 above and further discloses that the step of boosting boosts the priority of the application thread by a pre-selected level; high and low (fig. 2 col. 5, lines 60-67).

Claims 6, 15 :Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 5, 14 above and further discloses that the pre-selected level is fixed (fig. 2 col. 5, lines 60-67).

Claim 23:Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 4, 13 and 22 above and further discloses that the pre-selected level is fixed (fig. 2 col. 5, lines 60-67).

Claims 9, 18 and 26 :Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claims 1, 10 and 19 above and further discloses that the priority boost is based on a period of time since a last time the priority of the application thread was boosted (fig. 5, col. 8, lines 5-25)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kush. (US 6874144) in view of Accapadi et al (20050022186).

Art Unit: 2194

Claims 7, 8, 16, 17, 24 and 25: Kush discloses a method, system and computer-readable medium having computer-executable instructions as in claim 1, 10 and 19 above that determines whether to boost a priority of an application thread based on status of I/O operations, However, Kush does not explicitly disclose whether the need for more input output operations by the application thread or the number of input /output operations completed successfully determine to boost the priority of the application thread. Accapadi discloses a system, method and program that increase the priority of an application thread at the step where the user thread enter a critical section of code or the user thread has occupied a critical resource which forces more I/O operations and more data transactions that must complete successfully before execution of other threads (fig. 1, paragraph 25) such as updating data in user level data structure important to the overall process or a database thread that is currently updating a page of data in a buffer pool. It would be obvious to one having ordinary skill in the art at the time the invention was made to increase the priority of an application thread when certain number of transactions that produces frequently used data object are still running and must complete successfully before execution of other dependent threads. Therefore, one would have been motivated to provide a system, method and medium that increase priority of an application thread in order to maintain data structure integrity and to improve the overall system throughput.

Response to Arguments

8. Applicant's arguments filed on January 05, 2007 have been fully considered but they are not persuasive.

a. Applicant argues in (page 6, paragraph 2, lines 6-9) that, "Kush does not disclose or describe a system where the decision on whether to boost a priority of the application thread is made based on the the status of I/O operation performed for the application thread."

However, Kush in fact teaches in (col. 1, lines 55-65) and in (fig. 3a, mutex ID field 46 , col. 6, lines 10-30) a data structure including a "mutex" ID field that contributes to the decision whether to boost priority of threads . The status of the field element "mutex" is a principal factor ensuring that two threads do not concurrently access the same shared resources for read/write operations. Therefore the element "mutex" is taken into consideration whether to boost priority of threads; threads are ranked according to their priority attribute and higher priority threads have access to CPU time over lower priority threads.

Conclusion

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2194

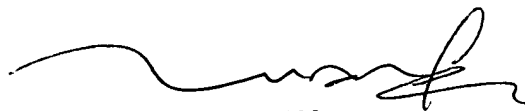
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exr. Abdou Seye whose telephone number is (571) 270-1062. The examiner can normally be reached Monday through Friday from 7:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, contact the examiner's supervisor, William Thomson at (571) 272-3718. The fax phone number for formal or official faxes to Technology Center 3600 is (571) 273-8300. Draft or informal faxes, which will not be entered in the application, may be submitted directly to the examiner at (571) 273-6722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-3600

AKS
January 07, 2007


TUAN DAM
SUPERVISORY PATENT EXAMINER